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Succisa pratensis and impact of herbivores on individual fitness

In this master thesis I tried to examine the impact of three herbivore groups on both short-term and long-term fitness of *Succisa pratensis* individuals. Concretely I studied these three herbivore groups: (i) folivores; (ii) stalk grazers; and (iii) seed predators. The impact of folivores and stalk grazers was studied in a four-year study on repeatedly censused individually marked *S. pratensis* plants on six sites. The impact of seed predators was studied in a separate experiment.

Stalk grazers and seed predators have a direct negative influence on short-term plant fitness. However, the impacts of stalk grazing were offset by affected plants by means of increased long-term flowering probability. On the other hand folivores have a long-term negative effect on plant reproductive effort despite their short-term positive influence on survival and clonal reproduction. Probable explanation of this observed phenomenon could be due to the influence of folivores on reproductive effort of the plants already in the year of their occurrence. The impact of seed predators is very variable, although higher plants suffered from higher proportion of destroyed seeds. A conceptual model of possible impacts of these three herbivore groups on fitness of *S. pratensis* individuals has been proposed together with possibilities how to test it in further research overcoming the pitfalls of the so far used methods.

The most important herbivore group seems to be the seed predators, whereas the stalk grazers seem to have negligible influence due to compensation in following years. Based upon the collected data the influence of folivores seems to be only limited after correcting for site identity. Its significance might increase with more data collected on the site level.

Keywords: *folivores, seed predators, stalk grazers,* Succisa pratensis, *herbivory, long-term individual fitness, incidence of herbivory*